

# Cristian Suarez

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## SUMMARY

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Senior computer science student at the University of Central Florida with 4+ years of C++ experience. Passionate about computer graphics, real-time rendering techniques, and performance driven real-time software development.

## EDUCATION

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### University of Central Florida

*Bachelor of Science in Computer Science*

Orlando, FL

*Fall 2021 – Spring 2025*

### University of Central Florida

*Masters of Science in Computer Science*

Orlando, FL

*Fall 2025 – Spring 2026*

## ACADEMIC EXPERIENCE

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### Undergraduate Research

The basis of my research is established from recent work on plasmonic paint which uses artificial nanostructures to control which wavelengths of light are reflected. My research goal is to simulate this behavior in a ray tracer by solving Maxwell's equations to calculate a reflection spectrum based on the nanostructure characteristics.

### Computer Science Fundamentals

- Design and Analysis of Algorithms
- Systems Software
- Processes of Object Oriented Software Development

### Computer Graphics and Rendering

- Computer Graphics
- Realistic Real-time Rendering
- Raytracing
- Teaching assistant for Computer Graphics class

## PROJECTS

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### Senior Design Project | *Unreal Engine 5*

- Developed an autoshooter video game in Unreal Engine 5 over two semesters with a team of 6 people
- Strengthened team dynamics, collaboration, and communication skills
- Developed core gameplay systems and mechanics using Unreal Engine's blueprints

### Direct3D Renderer | *C++, DirectX 11, WinAPI*

- Developing a 3D renderer using DirectX 11 and Windows API
- Model scene graph, various texture maps support, render queue
- Wrote an abstraction layer to allow for easy implementation of future graphics APIs

### Realistic Volumetric Cloud Renderer In Unity | *Unity, C#, HLSL*

- Developed A realistic cloud renderer based on various technical papers and SIGGRAPH presentations
- Volumetric rendering using ray marching
- Realistic lighting using physical properties

## TECHNICAL SKILLS

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**Languages:** C, C++, Python, C#, Java, HTML, CSS, Javascript, GLSL, HLSL

**Developer Tools:** Git, GitHub, Make, CMake, Premake, Unity, Unreal Engine 5

**Libraries/API's/Frameworks:** DirectX 11, WinAPI, OpenGL

## ORGANIZATIONS & HONORS

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- UCF Knight Hacks
- National Science Foundation (NSF), Florida IT Graduation Attainment Pathways Scholar
- Accelerated BS to MS program member